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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,009

08/25/2003

Amlan Datta

BALDS2.37AUS4

3329

20995

7590

04/27/2005

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EXAMINER

MARCANTONI, PAUL D

ART UNIT

PAPER NUMBER

1755

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/648,009

Applicant(s)

DATTA ET AL

Examiner

Paul Marcantoni

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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Applicant's arguments filed 2/22/05 have been fully considered but they are not persuasive.

**Obviousness Type Double Patenting:**

Claims 1-16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of U.S. Patent No. 6,572,697 B2 (Gleeson et al.), Datta et al. (2004/0081827 A1 which is 10/648,184) and Datta et al. (2004/0080063 A1 which is 10/648,585). Although the conflicting claims are not identical, they are not patentably distinct from each other because both teach a composition that can be used for a building material containing hollow inorganic microspheres.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The applicants have said that they will hold the sending of a terminal disclaimer. They are further alerted that Datta et al. patent application publications have also been added to the terminal disclaimer. Nevertheless, the rejection stands until submission of a proper terminal disclaimer.

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35 USC 102/103

Claims 1-16 are rejected under 35 U.S.C. 102(a and b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Drochon et al. '991 B1, Powers et al. '166, 193, or '758, Garnier et al. '137 (different than the withdrawn Garnier), Naton '345 or '983, Miller et al. '348, Tanaka et al. '222 B1, Matsubara et al. (2002/0004111 A1), Kawachi et al. '684, Yamada et al. (2001/0043996 A1), Anshits et al. '162 B1, Honda et al. '377 or '685, Matthews et al. '998, Alford '105, Pawlowski et al. (see abstract), Vijn et al. (2005/0011412 A1, 2003/0177955 A1, and US Patent No. 6,814,798 B2), or Brothers et al. '603 B2 or '961 B2.

All of the above cited references teach compositions that can be used for building materials comprising hollow inorganic spheres that are hollow glass microspheres. All prior references directed to fly ash cenospheres which is essentially known by the trademark or tradename of FILLITE containing a binder have been withdrawn because the amount of CaO is less than that according to claim 1. Applicants do not claim it but on page 7 of their specification they point out that the amount of CaO that is in their hollow synthetic microsphere is about 4 to 10 wt%. GB 1448320 has been cited of interest (as was US Patent No. 3,782,985 used in the first office action non-final rejection but withdrawn) because they both teach that fly ash cenospheres that are harvested from coal power plants for use in binders such as cement contain an amount of CaO of 0.2 to 0.6 wt% (see col.3, lines 1-15) which is why all these earlier references (with the exception of Drochon and Powers patents) have been withdrawn.

Garnier et al. teach that glass microspheres are made which have the same composition as claimed by applicants for their invention and on page 7 of their specification. Garnier et al. teach the composition of his glass microspheres on lines 25-35 of column 10. It is also understood and known in the art to add glass microspheres to a binder such as hydraulic cement and if not anticipated it would render applicants' invention obvious to one of ordinary skill in the art. Further, overlapping ranges of amounts would have been obvious to one of ordinary skill in the art.

Naton patents teach a composition comprising a binder and hollow glass microspheres that that read upon the instant invention such as Scotchlite TM glass bubbles (see col.7, lines 10-25 of '983, for example). If applicants can demonstrate that their composition is different than Scotchlite glass bubbles (it is believed from 3M), these references will be withdrawn.

Miller et al. '348 teach hollow borsilicate microspheres containing a sodium silicate binder (same as applicants for their invention) thus anticipating the instant invention. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Tanaka et al. '222 B2 teach a hollow glass sphere that, like applicants, is made from materials such as volcanic ash and bentonite (see col.4, lines 50-60 and page 12 first paragraph labeled [0041] in applicants specification) and it would have been expected because they are the same raw materials to result in a glass composition that is also the same. Further, the addition of glass microspheres such as Tanaka to binders including cementitious binders is known in the art.

Matsubara et al. (2002/0004111 A1) teach a hollow glass microsphere that is the same composition as that of applicants for their own invention (see abstract and p.7 of applicants' own specification) and teaches this microsphere is a filler for cement and building materials (see p.9 [0099]).

Kawachi et al. teach a glass bubble for a filler in a circuit board and the matrix material meets the limitations of the binder and the composition is the same or overlapping as that claimed by applicants on page 7 of their specification.

Yamada et al. (2001/0043996 A1) teach hollow aluminosilicate glass spheres that can be used as a binder for materials such as cement.

Anshits et al. teach a composition comprising a magnetic fly ash cenosphere with an amount of calcium that has an upper limit of 3.8 wt% CaO which is "about 4 wt%" and is a higher CaO content than conventional fly ash cenospheres such as FILLITE with amounts of CaO of 0.2 to 0.6 wt%. (see col.5, lines 20-30). Anshits even teach that these cenospheres can be mixed with a liquid silicate glass binder (see col.6, line 12) in amounts overlapping the instant invention.

Honda et al. '377 or '685 teach making hollow glass microspheres from volcanic glass and because it is the same starter material for the hollow glass microsphere of applicants invention (see p.12 first paragraph [0041] teaching volcanic glasses as a primary component) it would have been expected to have the same final composition for the hollow glass microsphere. Honda et al. also teach they can add cement as a binder.

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Matthews et al. '998 teach a method of forming a composition using a binder such as sodium silicate and a glass composition that meets the limitations of the applicants' claimed glass composition.

Alford et al. teach a composition comprising hollow glass microspheres and sodium silicate which is the binder thus anticipating the instant invention. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Pawlowski et al. teach a hollow microsphere derived from coal fly ash with a composition that is actually in the range of the applicants' own hollow microsphere of their invention (see p.7 of specification). Pawlowski et al. even teach that his hollow microsphere can be added to a binder such as cement (alumina or phosphate cement).

Vijn et al. and Brothers et al. all teach adding SCOTCHLITE or SPHERELITE hollow glass microspheres to cement thus anticipating the instant invention. If not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art. Should applicants show that these trademark glass microspheres are different than their own, the references would potentially then be withdrawn.

Finally, Netting (US Patent No. 4,411,847), Block et al. (5,069,702), and Block et al. (5,176,732) have been cited of interest as relevant art available to applicant at time of their invention.

**35 USC 112 2<sup>nd</sup> Paragraph:**

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

The applicants claim 1 is rejected because applicants do not particularly point out and distinctly claim the identity of their microsphere. Is it glass, ceramic? Further, it would appear that they do not positively recite the actual composition of this hollow glassy microsphere (which can be found on page 7 of their specification) yet these range of values are not in the claims and it is not proper for applicants to read the limitations of the specification regarding amounts of components into the claims. These ranges and amounts must actually be in the claim before applicants can argue against a reference not meeting what they hold as their invention. Further, the applicants seem to only recite negative recitation of what other microspheres do not have without actually providing a positive recitation of what actually is in their own claim. It is now known the CaO content is higher for their invention but this is vague because how much higher? Page 7 of the applicants' specification requires that the amount of CaO should be in the range of about 4 to 10 wt%.

It is also noted with respect to claim 1 that it would appear that the disclosure (see examples as well) requires the presence of a blowing agent which is not in independent claim 1 and seems to be a critical component of the instant invention.

Claim 9 is now indefinite because how do you distinguish between the binding agent and a hydraulic binder (claim 1 vs claim 9). A hydraulic binder is also a binding agent and applicants



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do not particularly point out and distinctly claim that they are different in claim 1 and 9. It appears that they could be the same but it is not clear.

**Objection to Specification and Terminology Contrary to Accepted Meaning:**

It is appreciated that applicants amended their claims to remove *natural* regarding cenospheres from coal combustion in the claims. However, they did not remove this term from their specification (natural) and replace it with derived from coal combustion. Please delete this term from the specification and distinguish the synthetic fly ash cenosphere produced from coal combustion from the instant invention's microsphere that is also synthetic. Should applicants not make this change as requested already in the first office action, the examiner may require a substitute specification so it would be appreciated if these amendments can be made in the next response to avoid this if possible.

**New Matter:**

Claim 16 is rejected under the first paragraph of 35 USC 112 and 35 USC 132 as the specification as originally filed does not provide support for the invention as is now claimed. There is no support for "5.2 wt% or more CaO". Further, the applicants upper limit seems to have no endpoint when the upper limit of amounts of CaO according to page 7 of the specification is about 10 wt% from a range of amounts of about 4 to 10 wt%.

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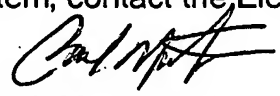
**The applicant's amendment necessitated this new grounds of rejection.**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Marcantoni whose telephone number is 571-272-1373. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Paul Marcantoni  
Primary Examiner  
Art Unit 1755

<b>Notice of References Cited</b>	Application/Control No. 10/648,009	Applicant(s)/Patent Under Reexamination DATTA ET AL	
	Examiner Paul Marcantoni	Art Unit 1755	Page 1 of 2

### U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-2004/0080063 A1 ✓	04-2004	Datta et al.	264/5
	B	US-2004/0081827 ✓	04-2004	Datta et al.	428/384
	C	US-4,661,137 ✓	04-1987	Garnier et al.	65/22
	D	US-5,384,345 ✓	01-1995	Naton	523/218
	E	US-5,407,983 ✓	04-1995	Naton	524/113
	F	US-5,534,348 ✓	07-1996	Miller et al.	428/402
	G	US-6,531,222 B1 ✓	03-2003	Tanaka et al.	428/402
	H	US-2002/0004111 A1 ✓	01-2002	Matsubara et al.	428/34.4
	I	US-5,591,684 ✓	01-1997	Kawachi et al.	501/33
	J	US-2001/0043996 A1 ✓	11-2001	Yamada et al.	—/—
	K	US-6,644,162 B1 ✓	09-2002	Anshits et al.	264/628
	L	US-3,904,377 ✓	09-1975	Honda et al.	—/—
	M	US-3,752,685 ✓	08-1973	Honda et al.	—/—

### FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

### NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<b>Notice of References Cited</b>	Application/Control No. 10/648,009	Applicant(s)/Patent Under Reexamination DATTA ET AL.	
	Examiner Paul Marcantoni	Art Unit 1755	Page 2 of 2

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-3,838,998 ✓	10-1974	Matthews et al.	65/21
	B	US-3,256,105 ✓	06-1966	Alford	---/---
	C	US-2005/0011412 A1 ✓	01-2005	Vijn et al.	106/676
	D	US-2003/0177955 A1 ✓	09-2003	Vijn et al.	106/724
	E	US-6,814,798 B2 ✓	11-2004	Vijn et al.	106/724
	F	US-6,811,603 B2 ✓	11-2004	Brothers et al.	106/718
	G	US-6,648,961 B2 ✓	11-2003	Brothers et al.	106/692
	H	US-3,782,985 ✓	01-1974	Gebhardt	---/---
	I	US-4,411,847 ✓	10-1983	Netting et al.	264/7
	J	US-5,069,702 ✓	12-1991	Block et al.	65/22
	K	US-5,176,732 ✓	01-1993	Block et al.	65/22
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
✓	N	GB 1,448,320 ✓	09-1976	Great Britain	Washington St. RSH ✓	---/---
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) <i>(abstract only)</i>
✓	U	"Novel raw material for producing heat insulating materials" Pawlowski et al., Silikattechnik (1982), 33(11), 339-340. ✓
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

L3 ANSWER 52 OF 63 CA COPYRIGHT 2005 ACS on STN

AN 98:184347 CA

ED Entered STN: 12 May 1984

TI Novel raw material for producing heat insulating materials

AU Pawlowski, S.; Hycnar, J.; Serkowski, S.

CS Inst. Metall. Mater., Polytech. Katowice, Katowice, Pol.

SO Silikattechnik (1982), 33(11), 339-40

CODEN: SITKA7; ISSN: 0037-5233

DT Journal

LA German

CC 57-6 (Ceramics)

AB **Hollow microspheres** (HM) with diameter 50-150  $\mu$  were separated from coal **fly ash** by the float-sink technique and used instead of perlite and vermiculite for the preparation of heat-insulating materials, e.g. for steel casting in permanent molds. The HM consisted of SiO<sub>2</sub> 49.6-61, Al<sub>2</sub>O<sub>3</sub> 26-30, Fe<sub>2</sub>O<sub>3</sub> 4.2-10.8, CaO 0.2-4.5, MgO 1.1-1.6, and K<sub>2</sub>O + Na<sub>2</sub>O 0.5-6%, the hollows being filled with CO<sub>2</sub> and N. Heat-insulating bricks of HM with phosphate or Al<sub>2</sub>O<sub>3</sub>-cement binder had a bulk d. of 430-600 kg/m<sup>3</sup> and compressive strength 1.6-4 MPa. The thermal conductivity ( $\lambda$ ) of HM increased only slightly with temperature unlike insulating materials based on kaolin fibers, the  $\lambda$  of which increased sharply at >700°.

ST coal ash microsphere thermal insulation; steel casting heat insulation

IT Thermal insulators

(from coal ash microspheres, for steel casting in permanent molds)

IT Casting process

(of steel, in permanent molds, heat-insulating materials for, coal ash microspheres in)

IT Ashes (residues)

(coal fly, **hollow microsphere** separation from, thermal insulators from)

IT Spheres

(micro-, from coal ash, thermal insulators from, for steel casting in permanent molds)